HYDROLOGY

Precipitation

The Spring River Tributaries Watershed average annual precipitation at West Plains from 1961-1990 was determined to be 45.09 inches. March had the highest average precipitation for the period of record at 4.63 inches (Figure Hy01) (Owenby and Ezell 1992).

United States Geological Survey Gage Stations

The United States Geological Survey (USGS) currently has no active surface gage stations within the Spring River Tributaries Watershed. No long-term continuous flow data exists within the watershed in Missouri. Three surface gage stations have existed within the watershed. These include 2 surface water quality stations and 1 peak flow station (Figure Hy02 and Table Hy01)(USGS 1997; USGS 1999a; and USGS 1999b). In addition, the Missouri Department of Natural Resources Water Quality Basin Plan (1994) provides a limited amount of discharge data for a few years between 1954-1967 for the Spring River (Warm Fork) at Thayer and for a few years between 1964-1970 for Myatt Creek at Lanton.

Average Annual and Peak Discharge

As stated previously no long-term flow data exists for the Spring River Tributaries Watershed. However, peak flow data is available for Station 07069100 on Adams Branch near West Plains, Missouri. Adams Branch is an unnamed, intermittent, 2nd order, losing stream which does not empty into any surface tributary according to United States Geological Survey 7.5 minute topographical maps. Twenty five peak discharge measurements were obtained from 1955 to 1979. Mean peak discharge at this station was 374 cubic feet per second (cfs). Maximum and minimum peak discharge measurements were 1,040 cfs and 164 cfs respectively (USGS 1999b). A single discharge measurement was also obtained from unpublished USGS water quality data. This measurement was 9.3 cfs and was for Station 07069150 (Spring River at Thayer) in December, 1964 (USGS 1999a). In addition Duchrow (1977) obtained discharge measurements for the invertebrate sampling site swf-0 at Thayer, Missouri as part of a water quality analysis project (Figure Bc03). Duchrow gave four measurements for all four collections at site swf-0 in 1974. The average of these four measurements was 125 cfs. Peak discharge occurred in the second sample in May at 231 cfs (Table Hy02)(Duchrow 1974).

It must be noted that the previous data is not a substitute for continuous long-term data. However unless a means of gathering continuous long-term data is implemented within the watershed, sporadic instantaneous discharge measurements will continue to be relied upon.

7-day Q2 and Q10 Low Flow Values

The Missouri Department of Natural Resources (1994) gives 7 day Q2 and Q10 low flows for two sites within the Spring River Tributaries Watershed. The Spring River (Warm Fork) at Thayer, Missouri has a 7 day Q2 low flow of 2.0 cfs and a 7 day Q10 low flow of 0.1 cfs. Myatt Creek at Lanton has a 7 day Q2 low flow of 0.2 cfs and a 7 day Q10 low flow of 0.

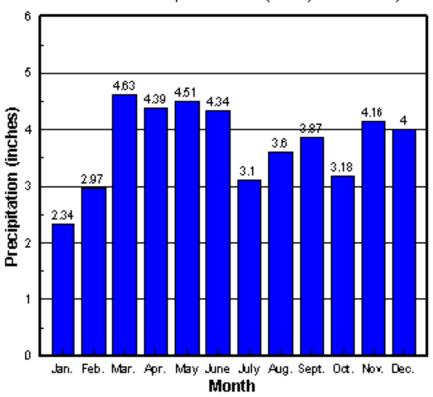
Duration Table of Daily Flows and Mean Annual Discharge

Sufficient data is currently unavailable to accurately determine flow duration.

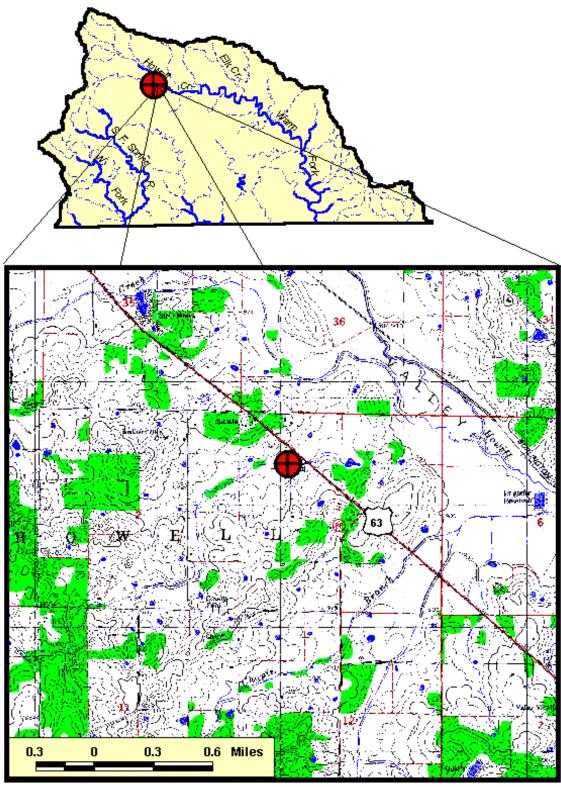
Flood Frequency

Sufficient data is currently unavailable to accurately determine flood frequency.

Figure Hy01. Average Monthly precipitation at West Plains, Missouri for 1961-1990 period of record (Owenby and Ez ell 1992).



Location of Peak Flow Station 07069100 Adams Branch Near West Plains, Missouri



Topographic Map Layer Source: USGS 7.5 minute topographic digital raster graphic (drg) "West Plains, Missouri".

Table Hy01. Gage stations in the Spring River Tributaries Watershed in Missouri (USGS 1997, USGS 1999a, and USGS 1999b).

Station #	Station Name	Period of Record	Туре
07069100	Adams Branch near West Plains, Missouri	1955-1979	Peak
07069150	Spring River (Warm Fork) at Thayer, Missouri	1964	WaterQuality
07069170	Spring River (Warm Fork) near Thayer, Missouri	1969-1975	Water Quality

Table Hy02. Discharge measurements as indicated by Duchrow (1974) for invertebrate sample site swf-0 on the Warm Fork of the Spring River.

Date	Discharge (cfs)
1-15-74	131
5-28-74	231
7-29-74	92
11-25-74	46
Average	125